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Original Lectures.

ORTHOPÆDIC SURGERY.

A LECTURE DELIVERED IN THE CLINICAL AMPITHEATRE OF HAHNEMANN HOSPITAL, CHICAGO, BY G. A. HALL, M. D., PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY.

On account of the crowded condition of our regular surgical clinic on Wednesday afternoon, the trustees and hospital board have decided to inaugurate an orthopædic clinic. By this means it is intended to supply a long felt need and to give the treatment of malformations and deformities ample time for careful consideration. To me they have entrusted this responsible duty and it is to be hoped that we may be able to extend our measure of usefulness in this special department.

For many years past, this department in surgery has been gaining ground until at the present day it is recognized as an independent and important field for the specialist. We hope at the clinic to be able, by a series of didactic lectures and clinical cases presented for treatment and operation, to impress upon your minds the importance of this departure from our regular clinic.

"The etymology of the term orthopædy is somewhat in doubt and has various interpretations by different authors. The derivation from the two Greek words *orthos, straight,* and *paideus I educate,* is the most comprehensive and, without doubt, gives the most perfect meaning of the word."

The history of orthopedy carries us back to Holland, which

is recognized as the birthplace of this branch of surgery. We find mention made of the first operation in 1685, when the operation for torticollis was performed on a boy twelve years of age.

Solingen, Meeckren, Roonhuysen, as well as other Dutch surgeons, have reported cases. "In the beginning of the eighteenth century, Boerhaave promulgated the theory of the great sensibility of the tendons and the gravity of all operations connected with them." Also the eminent French surgeon, De-la-Sourdière wrote as the closing words of a memoir: "the section of tendons ought then to be avoided." Owing to the influence of these eminent authors, the operation for tenotomy was for a time abandoned.

In 1782 Lorenz, of Frankfort, divided the tendo achillis in the case of a young woman seventeen years of age, which resulted in her great relief. In 1803 Scarpa invented the shoe, which is at the present day manufactured and employed in the treatment of club foot. The operation of tenotomy being revived, it was afterward advocated by Michaelis, Sartorius, Delpech, Dupuytren and Louis Stromeyer, and in 1834 orthopedy was fully established.

From this time on, eminent French, English and American surgeons continued to prosecute this branch of surgery with great earnestness. The world renowned Valentine Mott, who had performed almost every operation then known, went, in his advanced age, to Paris, where he spent three years, to complete the study and treatment of deformities.

That this is an extensive field for labor we are fully convinced by our daily observation. You can scarcely walk a block in this crowded city or pass a day in a quiet country village without meeting one or more cases which will appeal to your sympathy and charity for relief.

We shall consider our subject under two heads: *Malformations*, and *Deformities*.

I. Malformations.—Congenital malformation may be defined as an imperfect formation of the fœtus at birth. The causation of this deformity is still a mooted question. It is sometimes attributed to defective nutrition, faulty nervous in-

fluence, mental impressions and traumatism in general. We are not prepared to say that there is any one special reason which may always account for these strange freaks of nature. They are misfortunes, to say the least, and they will require your care and skill to make good the omissions of nature.

These malformations will come to you in a variety of forms, and the following may be enumerated as some of the most common: "Hare-lip, cleft palate, bifid-uvula, spina-bifida, fissured acetabulum, hypospadias, epispadias, extrophy of the bladder, fusion or web fingers and toes, supernumerary fingers, toes and ears, occlusion of the outlets of the body, the omission of some important viscera or member, as the hand, fingers, toes or lower extremities. All of these will require on your part both native ingenuity and expert skill as an operator. In some cases the parts can be partially or completely restored, while in others they must be removed. These special troubles will receive due consideration under their general head.

II. Deformities may be considered as morbid changes or alterations in the form or structure of the human body. They may be divided into *Natural* and *Acquired.*

Natural deformities are those which may exist from birth as the result of some influence in utero.

Acquired deformities are those which are begotten by surroundings, conditions or habits of life, or the invasion of disease.

It is a lamentable fact which we, as members of the medical profession are obliged to admit, that from these deformities and their results, we receive the major part of our practice. While this may be a source of income, we should not hesitate as individual members of that profession, to educate and instruct those in our charge, that they may, in a measure, avoid these terrible calamities.

It is a pitiful sight to see the innocent born placed under influences and conditions, or allowed to contract habits which must result in distortion, deformity, suffering and, many times, death.

The young child is too frequently intrusted to the care of those who are entirely ignorant of the anatomy and physio-

logical functions of the body. By such ignorant attendants, who are guided alone by long established customs and precedents, the little innocents are led on to the loss of physique and health.

The immoderate pressure of the "belly-band" may be the initiation of a contracted chest. The super-abundant diaper, as well as the untimely permitting the child to stand upon the feet, are among the more frequent causes of crooked limbs and other deformities of the lower extremities. The silly habit of sucking the thumbs, the arm resting upon the little, pliable ribs, may result in the chicken breasted or deformed thorax. Farther on in childhood and youth, customs of dress which constrict the waist and by limiting the motions of the arm, result in the flat-chested or pot-bellied child. The collapsed chest produces deviation of the curves of the spine, increasing the cervical curvature and flattening the lumbar. By this change the scapulæ are thrown out, the acromial districts approach each other anteriorly, the center of gravity is thrown anterior to the base, the weight of the body falls upon the anterior intervertebral disks, thereby laying the foundation for angular curvature or Potts' disease of the spine.

This change in the spine so alters the different planes of the thoracic, abdominal and pelvic cavities that the parietes no longer become a natural support for the viscera. The axes of the several planes of the body, which should be at different angles from behind downward and forward, or from before downward and backward, now assume the perpendicular and, when united, form one straight line through the entire cavities of the body. When this natural support is taken away, the viscera are maintained by the suspensory ligaments alone, and by their gravity must descend below their proper position.

The above condition, aided by the constricted waist, causes the liver on one side and the spleen upon the other to infringe upon the stomach, displacing this important viscus downward into the left infra hypochondriac region. The intestinal tract, convoluted upon itself, descends into the lower abdominal cavity, distends its walls and displaces the pelvic viscera, which in turn seek a retreat in the lower pelvic cavity, there to rest

upon and chafe the lower end of the bowel. As a result of this general displacement and deformity we have a more or less collapsed condition of the lung, imperfect action of the stomach, engorgement of the liver, stasis of the circulation of the bowels, and congestion of the whole pelvic district and viscera.

So lamentable is this calamity and so general is the deformity that we find a great majority of the female portion of the human family—especially those who are devotees of modern social life—suffering from one or more of this long list of ailments.

To correct these deformities and to instruct the mother and nurse how to avoid them is the imperative duty of every true physician.

The simple mode of dressing the feet is so misunderstood that the shoe-maker looks upon a perfect foot as a curiosity. When the feet are maimed, crippled or deformed, it must change the superstructure. It is impossible to have the carriage of the body perfect without a sure foundation, nor can there be a sound mind without a sound body. The short pointed shoe and the high narrow heel throw the whole mechanism out of gear and violate every law of the human economy.

These crippled conditions produce deformities, deformities produce functional derangement, functional derangement begets disease, disease produces suffering and pain, suffering and pain destroy happiness and peace of mind until the whole human tabernacle becomes a total wreck.

I have been so thoroughly impressed with the importance of this subject, and so fully comprehend the great extent of these evils, that I should fail to discharge my whole duty did I not earnestly entreat you, as medical students, to bear these facts in mind and never to neglect the important trust of your calling. As physicians, you are the guardians of the public health and interests.

The treatment of all congenital deformities should be undertaken early. The first step in that treatment is the removal, if possible, of the cause or influence producing the

trouble. Put the patient under favorable circumstances, and there is always a possibility of recovery.

Congenital troubles can not always be avoided, but they are amenable to treatment. Acquired deformities should be avoided, and it should be considered a greater accomplishmen to avoid an evil than to correct it after it is established.

An artist may paint a most beautiful rose, but a horticulturist will reproduce it from the bud. By his constant care and watchfulness, and by the most careful study of the surroundings, the diet and the life of the plant, he may surpass the work of art. So with the human family. If the same scrutiny and care be exercised in propagating and rearing the young, our labor may be rewarded in seeing the most symmetrical and perfect development of manhood and womanhood. Unfortunately it is not so much our province to project conditions and results as to treat them after they have been established.

Possibly a few simple rules relative to the management of general deformities may be of value:

First. After removing the cause, nutrition should be recognized. No plant can grow without nourishment, nor can the human body develop without food. See, then, that the assimilation and digestion are in good order. If the defect is in the osseous system, the nitrates and phosphates should constitute a large share of the diet. If the deficiency is in the muscular and adipose tissue, carbonates should be added.

Remove every constriction from the crippled part. If the volition of the part is destroyed, massage and manipulation should be employed. If there is a nervous deficiency, supply it by moderate electrical currents. Stimulate the circulation, for through that we receive growth and strength of the part.

In some cases it may be necessary to use mechanical appliances to support the body. These should be constructed with the view of aiding and not crippling nature's action. A brace imperfectly applied to a limb and impinging upon a large nerve trunk would increase the paresis. A band too tightly attached around the limb might constrict or cut off the circulation. A steel strap pressing upon a bony prominence will cause suppurative inflammation, etc.

In the employment of manipulation and electricity, care should be used to avoid exhaustion by overaction or protracted stimulation. Electricity should be continued for only a short period and at long intervals. The excessive use of either will cause debility instead of strength, and will impoverish instead of nourish the part.

Surgical operations are a necessity, and will frequently hasten results. A distorted limb might be restored after months or years of successful restraint and attention, but the same deformity might be relieved in a few seconds by the use of a knife.

To practice subcutaneous surgery you should be well posted in your anatomy. The injury of large nerve trunks or blood vessels would cause a serious delay, if not destruction of the part.

Cases of malformations and plastic operations we shall speak of under their special heads in a future lecture.

The latest sensation in the Hahnemann Hospital was the extraction of a set of false teeth from the œsophagus of a man by Prof. G. A. Hall, M. D., Surgeon. This sample of dentistry work had been swallowed some three weeks previous, when the victim was trying to get away with some very tough beef. And in the lower part of the œsophagus it had remained, regardless of attempts to dislodge the article. The paraphernalia in view when Prof. Hall began his task meant that if œsophageal bougies, alligator forceps, Virginia rail-fence forceps, twisted copper wire, and probangs did not release the toothsome plate, the operation of gastrostomy surely would. But the latter was not necessary, for the persistent work of the evermore persistent operator brought the false teeth and plate intact to light, after two and a half hours of labor.

Clinical Society Transactions.

DR. A. K. CRAWFORD, SECRETARY.

JANUARY MEETING, 1887.

This, the one hundred and nineteenth regular monthly session of the Clinical Society, convened as usual, in the Grand Pacific Hotel, on Saturday evening, January 8, the president, Dr. C. H. Vilas, occupying the chair. Being in part a memorial meeting for the late deceased Dr. A. E. Small, the attendance was especially large. After the adoption of a series of resolutions in this connection, which are published elsewhere in the present number, and several of the older members had spoken worthy tributes to his memory, the usual order of business was resumed. The report presented at this meeting was prepared by

THE BUREAU OF SANITARY SCIENCE.

DR. J. E. GILMAN, CHAIRMAN.

THE CLIMATIC TREATMENT OF PHTHISIS.—BY J. E. GILMAN, M. D.—In reading the mortuary reports of the Chicago health office, the large proportionate number of deaths from tubercular diseases at once arrests attention, but by comparison we find a considerably less ratio to other diseases here than in many other localities. For instance, in Great Britain one-fourth of all deaths are due to pulmonary consumption; in Paris, one-fifth; in Vienna, one-sixth. In our own country, as Dr. Edmund Andrews has pointed out, the disease diminishes as we recede from the sea. For instance, the deaths in Massachusetts are 25 per cent; New York, 20 per cent; Ohio, 16 per cent; Indiana, 14 per cent; Illinois, 11 per cent; Missouri, 9 per cent; Kansas, 8 per cent; Colorado, the same; Utah, 6 per

cent; while on the Pacific slope it again advances to 14 per cent in California; and if we were to include all the tubercular diseases, the ratio of mortality from this class of disorders would be largely in excess to these already large figures, as compared with deaths from all other causes combined. There are localities where phthisis rarely occurs as a disease engendered at home, the cases reported being mostly imported, and it is the object of this paper to speak of some of the conditions under which climate and certain localities may be prescribed with advantage to the patient. To rightly understand the subject, however, a glance at the etiology of the disease is necessary.

Until a very recent period pathologists held very diverse ideas of the exact nature of tubercle, but Villemin and others demonstrated its contagiousness, and Koch has settled the question, in a series of the most remarkable and exhaustive experiments ever given to the solution of a medical problem, that the intimate origin and cause of the development of tubercle is a bacterial form, to which he gives the name of the bacillus tubernusis. Without going into the subject of his discoveries farther, suffice it to say that he has exhibited the life history of this tubercle germ and the conditions necessary to its germination and development. There are two things very noticeable in this—one, the very slow growth of the bacillus; and the other, the high temperature required to maintain its vitality. The sputa of a tuberculous patient is filled with germs of tubercle. Unless this is destroyed by fire, the sputa drying frees the spores to float in the air and so to come in contact with the organs of respiration possibly. Then, if falling where they are undisturbed, as in a lung that is but slightly used, if the other conditions are favorable, they germinate to the destruction of the individual. That we all come in contact with these germs daily is no doubt the case, and the fact that tuberculosis is not more frequent still, is due to the fact that these germs fall upon soil unsuited to their needs. A vigorous vitality, actively moving organs of respiration and good circulation of the blood, furnish abundant protection from the invasion of the germ. The condition known as the scrofulous

dyscrasia, is prone to develop into tubercular disease, and we find here a lack of vitality; repairs of tissue take place slowly and tissue transformation is imperfectly executed, while effete materials are collected and excreted in a sluggish manner. Glandular circulation is irregular, and frequent congestion and stagnation is common. So we have in these cases the elements which favor the development of tubercle—lack of vigorous vital resistance, the feverish heat or heightened temperature, and the condition of inactivity allowing the time for lodgment and germination of the spore. Anything, then, which lowers the standard of vitality, depresses the nutrition of the body, or in any way lessens the natural and regular growth and repair of the organism, paves the way for the invasion of tubercle, if continued, while the reverse is true—that anything which builds up vitality, increases the activity of the tissue metamorphosis by replacing, with good material, the worn out substances, and promptly removes the latter through the sewerage system of the body, lessens the tendency to the formation of tubercular disease, and the effect in this direction of climate and locality is very great.

The climatic treatment of consumption is one upon which there is much difference of opinion. On the one hand Florida, Havana, the Bermudas, Georgia, or the south of France are advised; on the other, the Adirondacks, Minnesota, or even the colder latitudes — while California, Arizona, Colorado and Utah have each their adherents. The question of location, if a change is desirable, and when the move shall take place, requires a nice balancing of pros and cons in the mind of the medical advisers. To make a really good prescription of climate he must have studied it, and be familiar not only with its general variation of degrees of temperature and its average amount of moisture, but must know of its sanitary and hygienic conditions and the resources of the place for the comfort and convenience of the patient. If he has explored, himself, the region to which he proposes to send the invalid, he can then make a much better choice of a suitable place than if he has gained the knowledge through the medium of guide books or medical literature.

The fact that no region is absolutely exempt from the disease would be one point against the climatic treatment, but some localities are less affected than others. As pure air is a first consideration, the statements made by M. De Parville (and quoted in the *Medical Record* for October 24, 1885,) will be interesting: "He says that the proportion of bacteria in a cubic metre is 6 in sea air; 1 in the air of high mountains; 60 in the principal cabin of a ship at sea; 200 in the air at the top of the Pantheon in Paris; 360 in the Rue de Rivoli of Paris; 6,000 in the Parisian sewers; 36,000 in old Parisian houses; 40,000 in the new Hospital Dien of Paris; 79,000 in the old hospital of Pitie in Paris. In Ryder Street, St. James, London, a cubic metre of air contains only 240 bacteria, whereas in the Rue de Rivoli the same quantity contains 360. The greater purity of the London air is proven by the smaller death rate, and is accounted for by its proximity to the sea, by its covering a larger extent of ground in proportion to the population, and by its houses being lower," thus permitting the better ingress of sunlight. The higher altitudes possess the greater freedom from bacterial contamination of the air, and it is a matter of fact that some mountain regions seem to furnish almost complete immunity from the invasion of consumption.

Switzerland, in some localities, some of the table-lands of the Andes, the Anhuac or middle zone, the table-lands of Mexico, and the slopes of the backbone of the North American continent—the Rocky Mountains—are examples of localities in which the danger of the invasion of phthisis is reduced to its minimum. But it is not a certain guide to follow, even with these statistical facts before us, that these latitudes will cure phthisis, or even affect all cases of it favorably, for there are many other things to be taken into consideration. Undoubtedly the habits of life of the mountaineer have much to do with this immunity. As I have stated, the cause of consumption is primarily the lowered vitality and lessened activity of the circulation, with a consequent tendency to local congestions, in the glandular systems especially; and any cause operating to remove this inactivity and increase the

vigor of the patient tends toward warding off consumption. The habits of exercise and those severer forms that lead to a full use of the entire lung capacity and a rapidly renewed supply of freshly oxygenated blood to all parts of the body, and an equally quick and complete removal of effete particles, would probably have quite as much to do with this immunity from consumption as the almost absolute freedom of the air from bacterial invasion, valuable as that undoubtedly is. To decide upon the best period of the patient's life for the move to the right location, the type of the disease must be taken into consideration, and the general condition and family history must be reviewed. Dr. Mitchell writes in this connection: "Advice to the phthisical to spend a season a thousand miles from home is, to a large majority of them, not unlike that of the whimsical London doctor to the rag-picker he found coughing in the street: 'That's a bad cough, a bad cough you have. I advise you to make a journey on the continent; and in order to secure all the advantages, you had better travel in your own carriage.'" It is not always possible for our patients to take the journey with the expense attending it, and too often the invalid is sent upon a trip at a stage of the disease when he needs all the comforts obtainable at his home, and is entirely unfitted for the hardships and inconveniences which he must suffer in his travels. The prescription of a change of climate being made, after the time has passed when such change might have done some good. I have seen consumptives on the cars hastening outward bound to Colorado or California, when life was barely remaining in the wasted form, and the journey could not possibly be a benefit. The fatigue, exposure and privation shortened existence materially. When consumptives have reached that stage of the malady where the limit of life is to be counted by days, it seems to be a cruel thing, a uselessly cruel expedient, to send them off on long journeys. But where there is an evident tendency to the development of tuberculous disease, the alterative effect of a change of climate may be tried; or after the disease has become a settled one even. There are many cases where this change has worked wonders after the

disease has passed the early stages and become settled. The climate, by its tonic or stimulant effect, or the benefit that may be derived from it by reason of its dryness and even temperature, may so promote nutrition and relieve the constitutional debility as to end the trouble or at least stay it in its rapid course. There seems to be a wide-spread belief in the delusion that heat or hot climates are the most desirable for consumptives, but if we take into consideration that this is a disease of debility and weakness, it would seem that a colder region would be preferable to a warm one, on account of its greater tonic influence and the freedom from the enervating impressions of the warm climate; besides, as heat is necessary for the growth of the tubercle bacillus, the heat of the warmer latitude will certainly not tend to destroy it. A low temperature is not a cause of tubercle, for those regions which show the greatest freedom from the disease are subject to considerable degrees of cold. There is a great difference in this respect between tuberculosis and bronchitis. The bronchial irritation is acted upon quite injuriously often by contact with the cold air, while the contrary is quite as apt to be the case with the consumptive, so long as the air is dry. It is desirable that, whatever climate be selected, it should be one in which the patient may spend a good portion of the time out-of-doors; so, if the cold climate has frequent damp days, with cold and chilling winds, the consumptive must keep within doors during that period, and for that reason a warmer climate is generally selected. The warm climate, if too warm, or subject to hot winds, produces a sensation of exhaustion, while a cold climate chills and increases fever. A dry climate is generally the best for consumptives, although the sea air and a sea voyage will often "do a world of good."

It can be very readily understood why a dry climate is of the most value. In phthisis there is a continued inflammatory action of portions of the lung tissue, at times increased or active, and at others diminished, but at all times there is a constant, congested condition which interferes with a freedom of circulation of the blood and tends to light up into inflammatory action. When this inflammation becomes active

there is pain, and by the use of such revulsives as determine the blood to the external capillaries, and so relieve the internal pressure, we can stifle the pain and remove the sense of active inflammation. When the skin is active and the circulation free through the cutaneous capillaries, this internal congestion is lessened. This state of affairs is secured in a dry atmosphere. Then there is a greater determination of blood to the external capillaries when the air pressure is light (a condition that is present in elevated regions), and as Jacoud observes: "The fact of the blood flowing toward the superficial parts and extremities is acknowledged, but the fault is made of ranging the lungs among the superficial organs, and thus explaining the *supposed* hyperæmia and tendency to hemorrhage. Experience, however, has shown that during the special condition of the circulation which is associated with a low barometer, the lungs should be regarded as deep organs, and as showing their condition of relative anæmia. The researches of "Poiseulle and Voltsman have in fact shown that the amount of blood in the thoracic organs is in direct proportion to the atmospheric pressure, the pressure of the air breathed being understood to be the same as that of the air which weighs upon the surface of the body." This is in explanation of the fact that consumptives, even in quite advanced stages, are able to live in a rarefied atmosphere with a freedom from hemorrhage not enjoyed in a denser one. I would then formulate it into a general proposition that a moderate height, say from 4,000 to 6,000 feet above the sea level—in a dry atmosphere and in a well-drained location, in a latitude and region cold enough to give a bracing tonic effect and not subject to long-continued damp, wet and chilly periods—is decidedly the most salutary as the prophylactic, and for use in the beginning of phthisis. The height insures such a rarefied atmosphere that the congestion of the lungs is reduced to its minimum, and a better circulation through the capillaries of the skin is gained. The lessened air pressure demands a deeper inspiration, and so the lungs are made more active, as the respiration is increased to its maximum, thus lessening that condition favorable to the

generation or the spread of tubercle. At the same time the air in mountainous regions is especially free from bacterial germs. The dryness of the atmosphere also is illy suited to develop such as may be present, so that the patient may inhale pure air constantly, and with the dryness of the atmosphere it is free from that depressing effect that is the accompaniment of either warm, moist climates, or cold dampness. This freedom from moisture in the air makes the changes of temperature less marked in their effects, the patient being better able to withstand quite severe cold, although breathing the external air daily, and he endures and enjoys the warmth of the summer with its freedom from the lassitude common to those lower southern latitudes with a moist atmosphere. But the transition from this lower level to the mountain's height is not to be a matter of simply a day's journey. Individuals in the best of health, with all the elasticity of a sound constitution, can not make abrupt and profound changes in their manner of living and habitual surroundings without receiving a severe shock. Much less can the weakened frame of the consumptive resist such a decided change in his circulation and surroundings as is involved in the rapid transfer from this latitude (for instance) to Cañon City, Denver, or other famous health resorts of Colorado. The progress must be gradual—that is, the patient must make somewhat prolonged stops at intervals on his route to the Rocky Mountains.

Suppose an individual, who is in the first developed stage of phthisis, and whose condition is such that the Colorado climate is best suited for him, comes to you for advice as to where he shall go. Knowing the disadvantages of the too abrupt change, and desiring to have him receive the greatest benefit from his trip, you would advise him to rest for from one to two weeks each at stations 150 to 200 miles apart after leaving the Missouri River. At these stations (selecting those where the accommodations would be most satisfactory), he would stay exploring the country round about, and becoming gradually initiated into the use of a lighter air, and the habitual out-of-door existence in a dryer atmosphere. A month or even more may be profitably spent in the journey

from Chicago to Colorado Springs, and if the journey is made in the early spring and a higher altitude is desired, a month or two more must be spent before reaching the height of Central City or Leadville. Denver is about 5,000 feet above sea level; Colorado Springs about 6,000; Leadville is 10,000 feet above the sea level. I knew of one instance at least of a young lady in an advanced stage of phthisis, who, after a residence of some months in Colorado and Cañon City, which has an elevation of 4,500 feet, made the journey to Leadville by stage, remaining there for some weeks with actual benefit and a freedom from hemorrhage that at 600 feet (her former home) was becoming dangerous from its frequency, and was nearly relieved at Cañon City. Warn your patients against rushing up to these altitudes suddenly, for a decided injury will result instead of a benefit. As an instance in point, I was called to see a young man in an advanced stage of phthisis, in just that condition when the climatic change can at the best be but a chance of permanent good, and most probably of only transient benefit. I gave him the result of my experience and observation, as detailed above, with the advice to make short journeys and long stops, after passing west of the Missouri River. The convenience of the Pullman cars and the feeling of a journey's end attained, caused him to disregard the advice and hasten through to Denver at once. For two or three weeks there was a marked change for the better and then came the collapse, which was sharp and sudden. The physician then told him if he wished to see his home again alive, that he must go, without standing on the order of his going—go at once, and at once he started, only to die upon the road before reaching his friends. The effect of the air was too exhilarating; it was too tonic, too bracing, and like too much of a stimulant, the result was fatal instead of beneficial. Had he come into this by degrees, there can be no doubt that his life would have been prolonged, and possibly the disease might have been stayed for a very long period, or possibly obliterated. Many cases of consumption of as bad or worse form have been cured by a tent life during a Colorado season, the patient moving south with the advent of the winter storms

and severe weather. There is one point that must not be overlooked. Bronchitis has a cough and a sputa as a part of its symptomatology, both of them of the annoying type. The cough of bronchitis is increased by the influence of cold air, and if this cold air is loaded with snow or rain influences, it is especially deleterious.

In these cases of consumption in which the bronchial tubes are largely involved, a warmer climate than Denver becomes a necessity during the winter, and then Cañon City or as far south as the Hot Springs of New Mexico, at Las Vegas, is the advisable location. Throughout the whole region from the limits of western Kansas or Nebraska to the Sierra Nevadas, with the exception of certain circumscribed localities, the atmosphere has a freedom from moisture, and the thirsty earth speedily drinks up the rains and snows that fall, leaving the surface free from moisture. I have seen a rain storm of such severity as to wash away roadbeds, and of over twenty-four hours' duration, when within four hours after the surface of the earth was dry enough for us to sit or lie down upon it without soiling the clothing. It requires a dry climate and good drainage that will dispose of a rainfall of three to four inches of water in four hours so that no mud remains, except in especial localities, and this dryness is of especial value to the bronchial type of the disease with profuse and constant secretion of mucus. With this type of cases the cold air must be to a considerable extent avoided. A dry atmosphere and freedom from a very low temperature are the essentials of climatic treatment. Such a location as Las Vegas, except in the coldest weeks of winter, the lesser altitude of Albuquerque or even Tucson, for the winter only, may be desirable. If the latter place is chosen, the movement to a colder latitude should begin in March to avoid any depressing effect from the spring heats. So far as my experience and observation go, I have yet to learn of a better choice for a climatic sanitarium than can be found on that backbone of the continent—the Rocky Mountains and their foothills. Almost all desirable temperatures may be found comprised within reasonable distances. No difficulty exists in securing a suffi-

ciently rarefied air or a more condensed air, and the country is so fairly well settled that the invalid may find all the actual necessaries of life and many of its luxuries within reaching distances of where he may choose to abide. For the summer season and in the southern and sheltered localities for the winter, also tent life is to be recommended. Pure air is a necessity, and in a tent the air is much less liable to be loaded with foul emanations from diseased animal tissues, and day and night the lungs may receive their fill of untainted wholesome breathing material. It is a soothing poultice constantly applied to the tubercular infiltrated tissues, and the general building up of strength and the increase of appetite that follow, often produce marvelous results. There is one thing that must be impressed upon the mind of the individual who visits Colorado hoping to recover from phthisis, that is, he must burn his ships behind him (metaphorically speaking) and stay there until all traces of the disease have disappeared, and he can be pronounced a well man again. An improvement well begun there will not continue if the patient returns to his eastern home before the cure is completed. And when the gain is once arrested (if the journey is made and a residence attempted) seldom if ever is the downward progress again checked. The benefits of the Colorado sanitarium are exhausted as a rule. A continuous residence is needed or no cure will result.

I have seen it demonstrated over and over again. Parties feeling invigorated and freed from the weakness and unpleasant symptoms of the disease in a very great measure, begin at once to look with longing eyes toward the home they have left and with the self-deception characteristic of the disease, they easily convince themselves that now it is but a question of time when the recovery will be absolute, no matter where they are. It must be impressed upon their minds fully and absolutely, that as they value their existence upon earth, the stay must be continued in the charmed locality where the disease is being conquered, until the last vestige is obliterated. Even a short return trip of a week (unless the case is almost well) is a dangerous proceeding.

Weber says: "The patient should stay according to the nature of the case, from four and six months to as many years. He ought to remain until he is cured or until he sees that the climate does not suit him." Weber highly extols the residence upon an elevated locality, such as the Alps, for the winter season (and our Rocky Mountains quite correspond with the Swiss Alps). His reasons for this recommendation are: [Page 92, Weber's Croonian Lectures on Chronic Phthisis.] "The purity or aseptic nature; the comparative absence of floating matter; 2d, dryness of the air and soil; comparative absence of mist; 3d, the coldness or coolness of the air temperature, and the great warmth of the sun temperature" (the former as a preventive of the development of bacterial life, the other as permitting the invalid to sit out in the bright rays of the winter's sun, and bask in a sun bath in sheltered locations when well wrapped up); "4th, the rarefaction and low pressure of the air, causing a greater freedom of breathing by lessening the tendency to blood pressure and congestion in the lungs and a freer use of them, owing to the deeper inhalations taken in the higher altitudes; 5th, the intensity of the light. This because it prevents the development of bacterial and cryptogamic life; 6th, the stillness of the air in winter, thus allowing the patients greater freedom of out-door exercise; 7th, a large amount of ozone." When this combination agrees, there follows a general improvement, manifested by increase of appetite and ability to digest and absorb the food, with a corresponding increase in the blood formation and general nutrition resulting from the better appetite; and as the result of increased nutrition the strength is improved, the action of the heart strengthened, and there is an increase of nervous as well as muscular energy, all tending to the extinction of the disease. The winter time, with its severe cold, he holds, is not objectionable, and Jaccoud agrees with him that experience has been very satisfactory with such cases. But not all patients can endure this treatment, for some, approaching it with the most careful gradation find it still too tonic, too bracing, and producing unpleasant effects, and these patients may be classed under these heads as non-suitable patients.

These individuals who have some complication with the phthisis, such as disease or considerable weakness of the heart or blood vessels; albuminuria or other forms of kidney complications, emphysema, great tendency to feverish conditions such as comes from nervous irritability or from empyema; such patients as have a considerable obstruction to the breathing from pleuritic exudation, great destruction of lung tissue, and such as are unable to eat or sleep in elevated localities, or are lacking in ability to generate heat. Then there are some individuals of an excessively nervous type, with whom mountain air seems to excite and aggravate the erethism. From some of these conditions of complication the patient may be freed so that after a time the high altitudes may be endured well. From others, however, no relief may be hoped which will be considerable enough to permit such choice of residence. From some of these nervous conditions, however, great relief may be secured by a judicious wearing of silk underclothing under the flannel, so as to furnish an insulation from the electrical influences and frequent changes, as well as the variations of temperature. For those individuals effected with such complications as spoken of above, a different kind of climatic treatment must be prescribed. An ocean voyage is often of great benefit. The sea air is almost as free from germ life as the mountains, and the tonic effect is great and lacks what is to this class of patients an objectionable feature—the rarefied atmosphere, of which they are never able to inhale enough without too much effort. Then the sea air is more or less impregnated with aseptic substances, which in some degree are of value in inhalation, and the humidity of the air so medicated is not objectionable to many of these cases. Often you may find it necessary to build up a little strength and energy in some mild atmosphere, and as improvement progresses, transfer your patients to a higher altitude and a more tonic climate. The general rules here laid down will enable you to advise your patients to select a suitable sanitarium, whether it be in Minnesota, Colorado, California, "a life on the ocean wave," or the Southern States. The chief essential of the whole climatic treatment is the selection of a place blessed with an atmosphere of absolute purity, and where the climate is such that the air may be enjoyed in all of its pristine clearness most constantly. All other advantages cluster around this as the central and most essential figure.

CLIMATE AND PHTHISIS OF SOUTHERN EUROPE—By B. S. ARNULPHY, M. D.—I am happy to endorse, as far as my personal experience is concerned, Dr. Gilman's very able paper. However, having practiced medicine for several years in Nice (south of France) and being thoroughly acquainted with the climatological conditions of that charming city as well as with that of its surroundings, I thought it would be of interest to the readers of the CLINIQUE, to add a few practical remarks. To speak the truth—and *that* a physician worthy of the name must always do—I have never seen a case of confirmed phthisis benefited by the climate of different stations of the *Riviera*—whereto geographically we may add Nice and Mentone—unless it was a case belonging to the *torpid* variety of the disease. Whenever there is a tendency to vascular or nervous erethism, the stimulating and exhilarating influence of those regions will prove anything but beneficial. Under such circumstances I have nearly always observed an elevation of temperature, an increase of the nocturnal sweats, and recurrent attacks of hæmoptysis.

I would never advise any physician, anxious to preserve his patients' life, to send him to bask in the sun of those fortunate shores, unless they were in the first stage of the disease; and not even then if they were of a very nervous temperament.

I quite agree with Dr. Gilman respecting the evil effects which threaten the patients living close to the sea. There seems to exist in the lower strata of the atmosphere a kind of chemical and electric conflict between the sea air and the mountain air, which bodes the affected lungs nothing good, and readily induces congestion of those organs.

I would then advise the patients to avoid the immediate vicinity of the sea and to settle on the lovely hills which generally rise a few miles from the sea-shore northward. Again, I would strongly warn them against the treacherous and chilly mist which falls on the belated promenader at the sunset hour, being the cause of severe sore throats, bronchitis and rheumatic pains. This phenomenon generally takes place in the winter season at 4:30 P. M., and later at 5

P. M. and 5:30 P. M. It is especially dangerous after a hot, bright day, of which there are too many in that region.

Under the former restrictions Nice, Cannes, Mentone, Bordighera or San Rema, may either of them be chosen indifferently.

Cannes is more blustery than any of the other stations. Algiers is hardly to be recommended. Tunis, on the contrary, some five or ten miles from the sea, affords delightful health resorts. Sicily is too close to the Italian coast. As an island climate, almost perfect, let us cite Madeira.

As to the beneficial effect of a long sea voyage, I can bear testimony. It soothes and invigorates the lungs wonderfully. A personal friend of mine was totally cured that way, after six months of sailing.

THE INFLUENCE OF ANTI-HYGIENIC SURROUNDINGS ON THE DEVELOPMENT AND PROPAGATION OF PHTHISIS PULMONALIS IN THE CITY OF CHICAGO.—BY GUY B. DICKSON, M. D.—On looking over the Board of Health reports for several years, my attention was arrested with the fact, that while phthisis pulmonalis cut off many lives in the several wards of this city, the death reports indicated a preference of phthisis for the inhabitants of certain wards. This seeming preference excited my curiosity, so that I have, in a meager way, attempted to investigate some of what I thought to be the causes of this tendency to phthisis pulmonalis in certain wards. Not being able to obtain the health reports for many years back, and not wishing to weary you any more than necessary with a vast array of figures, statistics, etc., I selected the reports of the two years 1882 and 1886.

I found that in 1882 the deaths from phthisis in the city of Chicago were distributed as follows.

Ward	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1882	17	40	25	47	90	61	64	68	36	45	41	48	26	105	59	33	47	25
1886	5	36	23	56	89	76	55	72	32	24	39	57	45	119	42	31	44	22

It is readily seen from these reports that the wards whose death rate from phthisis was highest in 1882 correspond to those wards that in 1886 give the highest death rate from this dread malady. Let us take, for instance, the four wards giving the highest death rate for both years, also the four wards having the lowest death rate, and look somewhat into their topographical and sanitary history. The four wards in which phthisis was most virulent are, in their order, Fourteenth,

Fifth, Eighth and Seventh; the four lowest, the First, Third, Thirteenth and Sixteenth Wards. Taking these wards as a "basement membrane," I might say, I have endeavored to ascertain some reasons why these wards should, from year to year, give the highest and lowest death rates from phthisis pulmonalis.

In the year 1882 the population of the Fourteenth, Fifth, Eighth and Seventh Wards was, respectively, 64,842, 57,069, 38,849, 41,525. By far the "lion's share" of the inhabitants of the Fourteenth Ward were of the foreign element, as German, Irish, Scandinavians and Sclavonic. Those of the Fifth Ward were largely foreign. The Eighth Ward was Paddy's and Molly's territory, for the Irish element was largely in excess. In the Seventh Ward the German and Irish element predominated. In the year 1885 the inhabitants of the Fourteenth Ward numbered 85,855; the Fifth, 68,761; the Eighth, 43,563, and the Seventh, 48,643. The proportion of nationalities in these wards remains very similar to that of 1882. The First, Third, Thirteenth and Sixteenth Wards had in the year 1882 a population as follows, viz.: 11,031; 18,479; 23,884 and 25,439. The First Ward was and is pre-eminently an American ward. The Third Ward follows in the same furrow. In the Thirteenth Ward the Americans "still hold the fort," but are strongly opposed by the Irish, while the Sixteenth Ward again takes up the foreign element. On examining the reports for 1885, I found the population of the First, Third, Thirteenth and Sixteenth Wards to be, respectively, 12,971, 20,050, 27,511 and 31,702, thus showing a steady increase during the intervening years. As regards the distribution of nationalities, it remains about the same, generally speaking, as in 1882—the Americans constituting the greater proportion. We have only to consult the Board of Health reports to see how the sanitary condition of Chicago is being constantly improved through the indefatigable labors of Dr. De Wolf and his corps of assistants. The Board of Health report for 1885 gives the feet per capita of sewerage for the Fourteenth, Fifth, Eighth and Seventh Wards, as follows: 2.86, 3.61, 2.46 and 2.93 feet. For the First, Third, Thirteenth and Sixteenth Wards, respectively, 7.03, 3.76, 4.07 and 2.08 feet per capita.

Doubtless by this time you, gentlemen, are wearied with the per capitas, populations, etc., and are endeavoring to discern in the dim horizon what is to be deducted from this heterogeneous mass of figures. It is at the present time almost a conceded fact, conclusively proven by the researches of our eminent pathologists, microscopists and clinicians, that,

although phthisis pulmonalis is due to a specific organism, the "bacillus tuberensis," yet there are sanitary conditions surrounding which aid markedly in its development or non-development. Now, what are these conditions? Dr. Alfred L. Loomis, in his "Practical Medicine," speaking of the anti-hygienic surroundings of phthisis says: "Second only to hereditary influence are anti-hygienic surroundings. Impure air, improper quality and insufficient quantity of nutritious food, are among the most prolific of this class of causes. Bad ventilation and impure air, indoor life, especially when large numbers are crowded into a small space, are strong predisposing causes. The frequency of phthisis in clerks, printers, tailors, milliners, seamstresses and factory employes, who live in a hot, close, dust-laden atmosphere, prove this. Of indoor workers, those are liable to phthisis who exercise least at their vocations. Compositors suffer oftener than the press hands in the same room. The moister the air, and the higher the temperature of the apartment, the more liable is phthisis to be developed. If, in addition to these anti-hygienic conditions, are added insufficient and improper clothing, want of cleanliness, alcohol drinking, prolonged lactation, and repeated miscarriages, it is evident that the feebleness of constitution which predisposes to phthisis can be acquired as well as inherited." He continues by saying: "I am convinced, from a careful analysis of my records, that the phithiscal developments depend as much upon the anti-hygienic influences under which childhood has been passed, as upon hereditary tendencies." Not only Dr. Loomis advocates and propounds these theories, but he is seconded by such men as Drs. Pepper, Hermann Webber, Fothergil, S. Lilienthal and many others.

That phthisis pulmonalis is a contagious disease, is strongly advocated by some of our eminent authorities, while others, of equal knowledge and experience, dispute this theory on the ground that enough known cases of direct transmission are not in existence, compared with the innumerable caravan of cases whose direct cause has not been disclosed. However, the experiments of Villimin Koch and others, have proven to me that phthisis is a contagious disease, the virulence of which contagion depends to a great extent upon the vitality of the soil it falls upon and general sanitary surroundings. Like all contagious diseases, it must come in contact with soil suitable for its development, or else it withers and dies. Now let us endeavor to ascertain if the condition of the wards and their inhabitants before mentioned, are favorable or not favorable for the development of phthisis. In recalling the number of deaths from phthisis pulmonalis per year, you will recollect that the

Fourteenth, Fifth, Eighth and Seventh Wards, gave the highest per cent in 1882 and 1886; while the First, Third, Thirteenth and Sixteenth Wards' records were the lowest. Why these wards should give such high death rates, we do not know. At first thought you will doubtless say: Why the population of these wards, that is, the Fourteenth, Fifth, Eighth and Seventh, is much greater, and, therefore, necessarily their death rate would be much higher. But can we say, when the difference in population between those wards giving the highest and lowest death rate, viz.: the Fourteenth and First Wards, was 53,811 in 1882, and 72,884 in 1886, that the mere fact of a denser population would account for a difference of 86 deaths in 1882, and 114 in 1886? I say most emphatically—No, there must have been other more potent causes tending to increase this mortality. Again you will say, it is not a just comparison, that of the First and Fourteenth Wards, for the inhabitants of the First Ward are mostly inmates of hotels, boarding-houses, etc., while the Fourteenth Ward population are inhabitants, as a rule, of poor dwellings, shanties and miserable hovels; yet a comparison of the other wards gives a similar and as striking a difference. As a rule, poverty and large families go hand in hand, and a ride through the Fifth, Sixth, Seventh, Tenth, Fourteenth and Seventeeth Wards on a bright summer's day, is all that is necessary to verify this statement. In the Fourteenth Ward we find several families occupying the same house, which is barely large enough for one family. They eat, sleep and wash in the same room. Their rooms are poorly ventilated; their facilities for disposing of filth, should they desire to do so—which is rare—are poor. Their supply of food is not only meager, but coarse, and often incapable of affording the necessary nourishment that their worn out constitutions require, the inevitable result being a lessened vitality. Their clothing, if we might call it such, is in many cases insufficient, barring the fact of protection against our very changeable climate. As I have shown, the rate of feet of sewerage per capita, in the Fourteenth Ward, is 2.86 feet as compared with 7.03 feet in the First Ward.

The inhabitants of the Fourteenth Ward, as a class, are not strict disciples of sanitation, and the inevitable result, with so small a sewerage outlet and the filthy carelessness of the inhabitants, is the accumulation of filth and the lessening of the power of vital resistance of the inhabitants. When filth accumulates and poverty holds forth, an impure air and an improper and insufficient supply of food are as sure to follow as the explosion after the ignition of gunpowder. On the other hand, let us investigate the condition of the inhab-

itants of the First, Third, Thirteenth and Sixteenth Wards. Already I have stated the inhabitants of the First Ward resided principally in the numerous excellent caravanseries that abound in this ward. They are, as a rule, well clad, and assuredly well fed. Their apartments are furnished with the latest plumbing improvements. With them compulsion is not, generally speaking, necessary in order that they keep themselves and their surroundings in the best sanitary condition. The facilities for the removal of filth are far better than in the Fourteenth, Fifth, Eighth and Seventh Wards, the result being a more pure and healthy atmosphere—one of the strong anti-phthisical forces. What has been said of the First Ward can be reiterated of the Third, Thirteenth and Sixteenth Wards. However, in these wards the inhabitants reside more in palatial residences and neat dwellings, whose sanitary surroundings and plumbing attachments are, in many cases, superior to those in and about the hotels.

After summing up and recapitulating in my mind the preceding evidence and statistics, although limited, I have concluded that this partiality displayed by phthisis pulmonalis for the inhabitants of the Fourteenth, Fifth, Eighth and Seventh Wards is due, in a very great degree, to the anti-hygienic surroundings existing in those wards. Had I been able to collect the statistics for many years, I believe that I could have given you a more conclusive, practical and authoritative illustration of the marked effect of anti-hygienic surroundings on the development and propagation of phthisis pulmonalis in the several wards of this city.

Treatment in cases of poisoning—By Dr. J. B. S. King. —There are few emergencies which so powerfully try the skill and knowledge of the physician, or in which these qualities are so decisively rewarded by favorable results as in cases of poisoning.

The certainty of a fatal termination, if nothing is done, or if the wrong thing is done; the certainty of saving life, if the proper measures are taken promptly, together with the necessity for rapid action and the little time allowed for thought—all combine to make the doctor's position desperately embarrassing, unless he knows just what to do and how to do it.

The treatment naturally resolves itself into two general principles: first, the immediate and complete evacuation of the stomach; second, the administration of the proper chemi-

cal or physiological antidote. Which of these should be done first admits of no general answer, as it depends upon the nature of the poison, the amount taken, and the appliances at hand.

The agents by which the first of these two indications is best accomplished, are the stomach pump and emetics. The ordinary stomach pump is an almost useless instrument; it can seldom be found when needed, and when found it is still more seldom in serviceable condition. The long period of inaction to which it has been subjected generally renders the piston and the valves leaky and stiff. An instrument more simple and a hundred fold more efficient can readily be extemporized out of a rubber tube from twenty to thirty inches in length, and a glass funnel, or an old fashioned barrel syringe in lieu of the latter. The method of using will be described further on. As for emetics, the promptest are the best. Nothing is more readily obtainable or more efficient than a tablespoonful each of raw mustard and salt, mixed with sufficient warm water to make a thick liquid. Apomorphine is probably still more prompt, and has the additional great advantage that it can be administered hypodermically when the throat is too raw and inflamed to swallow anything, as it often is when strong acids or alkalies have been taken.

The dose is one-quarter grain, when taken by the stomach, or one-tenth grain when given hypodermically. For use in the latter way a convenient formula is as follows:

℞

Apomorphiæ Hydrochlor.	gr. 1.
Aquæ Destil.	M C.
ft. sol.	

of which 10 minims correspond to one-tenth of a grain. Unfortunately it does not keep well, and can not, therefore, be kept on hand ready for use. Sulphate of Zinc in 10-grain doses is also a prompt and efficient emetic, and the same may be said of Sulphate of Copper in 5-grain doses, but Ipecac should never be thought of in cases of poisoning, its action being too slow.

The second part of the treatment, i. e., the application of

the proper antidote, requires some special chemical knowledge.

The antidotes to a few of the more common poisons are here given:

Arsenic.—The antidote is the freshly made hydrated sesquioxide of iron, which may be made rapidly by the following process:

To any of the* officinal iron solutions, diluted with several times its bulk of water, add a small quantity of aqua ammonia, and agitate thoroughly.

If, after thorough agitation, no odor of ammonia is perceptible, repeat the process, and continue to do so until a *faint* odor of ammonia is perceptible. A great excess of ammonia should be studiously avoided, as it would have to be washed out before using, a process that involves some loss of time.

The whole mixture is then thrown into a towel, or large handkerchief, held or suspended by the four corners, the latter brought together, and the liquid forced out from the precipitate formed by strong pressure with the hands.

The magma in the strainer should then be given in large and repeated doses.

Dialysed Iron is not so efficient, but serves a useful purpose, if the former is not obtainable.

Phosphorus.—Sulphate of Copper in griii doses, dissolved in much water, should be given, and repeated in five minutes, until as much is taken as is deemed safe. It acts both as an emetic and as an antidote.

To give Oil of Turpentine, as is recommended in many works, is to lose valuable time. It is true that the acid, French Oil of Turpentine, is an efficient antidote to Phosphorus, but this article is not usually found in this country.

The corrosive acids, Nitric, Sulphuric and Muriatic, are best antidoted by the alkaline hydrates, i. e., Liq. Potassæ, Liq. Sodæ or Calcined Magnesia mixed with water. The carbonates of these alkalies will answer, but not so well as the hydrates. The caustic alkalies are antidoted by diluted acids, and by large quantities of oil, such as Olive or Almond.

In the case of the last two poisons, considering the throat

*Monsel's solution, or the Tinct. of the Chloride of Iron, would probably be the most readily obtained.

and œsophagus are often so excoriated that the antidotes have to be given through an œsophageal tube, to overcome the spasmodic stricture which prevents swallowing.

Corrosive Sublimate.—Albumen in the form of raw eggs.

Soluble Copper Salts.—The same.

Tartar Emetic.—Tannic acid, strong tea or other vegetable astringent.

Soluble Silver Salts.—Common table salt; the mustard and salt emetic is therefore especially appropriate.

Lead Salts.—Epsom Salts, Glauber Salts, or any soluble sulphate.

Prussic Acid is a poison of such terrible intensity and of such rapid action, that but little time is left to administer any antidote. The recognized antidote, however, is a mixture of a ferrous salt (as Copperas), a ferric salt (as Tinct. Iron), and some alkali, such as Magnesia. By these chemicals the Prussic Acid is converted into the comparatively harmless Ferrocyanide of Iron, or Prussian Blue.

Two cases of poisoning which have occurred in the experience of the writer are appended.

A drug clerk, while engaged in the arduous task of taking the yearly account of stock, thought his labors entitled him to a modest sip of whisky, although it was against the rules of the establishment.

In his haste to avoid observation he seized the wrong demijohn, and swallowed an unknown amount of Tinct. Aconite Root. He immediately discovered his mistake, and with extreme agitation of voice and manner informed his fellow clerks of what he had done.

There was no physician present, and the mistake of giving him Ipecac as an emetic was made. This having no apparent effect, a rubber tube, about twenty-five inches long, was thrust down the throat, and a pint or more of water forced into the stomach by means of a large syringe. This was withdrawn, and fresh water injected.

The operation, being repeated several times, the stomach was thus thoroughly washed out, the process also being aided by the vomiting which came on afterward.

Entire recovery was the result.

An apparatus involving the same principle is described in The Clinique, Volume III, page 436.

June 23, 1886, I was called in great haste to see a woman

who had poisoned herself with carbolic acid. Although I arrived a very few minutes after the ingestion of the poison, the woman seemed comatose, as if under the influence of a powerful narcotic.

Remembering the lesson of a former time, I speedily procured a rubber tube, a syringe, a funnel, and a pint or more of sweet oil.

The tube was introduced into the stomach and the sweet oil poured through it; then a large quantity of warm water injected by means of the syringe, and the whole withdrawn; the process was repeated several times. In this way the stomach was thoroughly washed out, and the woman recovered after a severe attack of gastritis.

A FEW CASES OF OXALURIA.—BY DR. BERNARD S. ARNULPHY, OF THE PARIS SCHOOL OF MEDICINE, CHICAGO.—The presence of a few isolated crystals of oxalate of lime in the urine is a very common thing, and it would require a highly quixotic disposition in order to give it the character of a startling and ominous symptom.

It may easily be detected in the urine of all the great eaters, of those especially who indulge in large draughts of gaseous drinks, such as champagne and beer. This variety of accidental oxaluria is very frequent also with persons too strictly addicted to a vegetable regimen. Schultzen even ventured to say that oxalate of lime normally exists in the urine. I can not accept his view of the thing. Besides the above conditions, which are compatible with perfect or at least relative health, this oxalate has been found in the urine after certain severe affections of the lungs, as well as during the convalescence from grave diseases, such as typhus fever; in some affections of the heart, the effect of which is to slacken the respiratory functions; it has also been observed in long-standing leucorrhea attended with digestive troubles (Donné).

Garrod has pointed out its presence in the urine of the gouty, and Beneke in that of the rachitic. Beneke even attributes to that fact a considerable importance, as he thinks that the oxalate either assists in preventing the calcification of the rachitic bones, or causes the decalcification of osteomalacia.

There are two diseases connected by more than one link

wherein a notable degree of oxaluria is nearly always present, *id est* in diabetes and obesity. This is not and can not be a fortuitous circumstance. It will be seen that in one of the cases I am about to relate, a severe attack of oxaluria has preceded the appearance of diabetes. I knew a case of obesity in which the oxalate followed closely all the oscillations of improvement and aggravation in the general health. But I can not, as yet, throw much light upon the question and must be content to note this perplexing coincidence, so as to direct the attention of practitioners to it.

The oxaluria which we shall study is altogether different from that just referred to. It constitutes a pretty well defined pathological state, based upon a complexus of symptoms, both subjective and objective, easily recognized, the deep lying cause of which is a slackening of the nutritive mutations, involving a regular drain, which deprives the organism of its most precious mineral elements.

Such a morbid condition may be termed an *acid dyscrasia*, which depends upon a nervous trophic trouble, and which, fortunately, takes in most cases a transitory character.

Nevertheless, as this abnormal state of things may be carried far enough to become serious to the patient and to change his constitution, and as, on the other hand, it leaves the door open to formidable complications in the urinary tracts, such as insoluble calculi of kidneys and bladder, I consider it is the duty of the physician to diagnosticate it at once and to effect a speedy cure.

Let us illustrate these premises with a few clinical cases.

Case 1. Nice, February 12, 1882.—Baron L. L., a tall, fair gentleman, forty-eight years of age, of rather robust appearance, called at my office. He complained of violent pains in the lower part of the back; felt a decided weakness in his legs, and a general lassitude. He insisted upon this point, that he felt still more weary on awaking in the morning, than upon going to bed. The sleep and appetite were pretty good. A careful examination of the patient revealed no definite organic trouble. The renal region was somewhat painful to pressure. What struck me most forcibly was a general expression of subdued grief in the face, the features were drawn and flabby, the complexion was sallow, and the eyes

looked heavy, with black circles around them. In response to my questions the baron told me that, a few months before, he had lost an only child, twelve years of age, whom he loved very fondly, and, that since that time, he had never felt well. He had in former years experienced erratic pains of a rheumatic character in his joints. The pulse was weak, 68; the tongue pale but clean. I decided that he suffered from a rheumatic condition, modified by mental depression, and I prescribed *Ignatia* 3, and *Rhus Tox* 3, in alternation.

A fortnight afterward (February 28), the Baron called again. His general condition was much worse. The face was pale and wan, the pains in the loins were still sharper and more frequent, the general weakness more marked, notable thirst, and the stomach was irritable; besides there was a painful condition of the bladder, attended with burning after urination. The total failure of my treatment puzzled me. I felt that I had something unusual to deal with, and a keen sense of duty, mingled with curiosity, urged me to get a clearer view of the case. So I sent the Baron to bed, charging him to preserve his urine for inspection at my next visit. I began to suspect that diabetes was at the bottom of the difficulty. The next morning (March 1) I found the patient in bed; he had suffered intense pain during the night, and had passed urine frequently. Still the water was scanty, of a dark red hue, with a considerable deposit, as if he had had fever. But such was surely not the case, since the thermometer used in the night (by the patient himself) had stood at 98.9°. When the pains were at the worst, the patient felt sick, with some palpitation of the heart, and a slight smothering feeling. The stomach was out of order, the breath foul, acid, and the bowels were constipated. *Nux vom.* 3, three drops every two hours. I hastened home, in order to examine the urine for myself. The result was that I found a large excess of phosphates and sulphates, urates and uric acid; urea was diminished, and moreover the microscopical examination showed quite a number of red globules intermixed with many characteristic crystals of the oxalate of lime, and some epithelial cells from the bladder, and a few renal tubuli, traces of albumen, but no trace of sugar. The mist that hung over my mind respecting the puzzling aspect of the case began to rise, and an earnest search through my library entirely dissipated it. I knew, beyond all doubt, that it could be traced to the presence of the calcic oxalate in the urine. Of course I did not as yet fully realize the significance of the connecting link between the abnormal salt and the excess of phosphates and sulphates, as well as of uric acid and the diminution of urea; but I felt

confident that such a fact was not a mere coincidence, and, moreover, I knew that if I could get rid of the obnoxious salt, the patient would be restored to health. It was easy enough indeed to understand that this compound, owing to its peculiar way of crystallization, which made it bristling with acute angles and cutting edges, hard and insoluble as it is, had slightly lacerated the kidneys and irritated the bladder, which accounted for the presence in the urine of red globules, mucus and dèbris of epithelium from those organs.

March 2.—Having ascertained my ground of operation I prescribed *Arnica* and *Nitro muriatic acid.* A slight improvement was noticed in a few days, but the quantity of oxalate expelled by the urine was hardly altered. The fourth day (March 5) I found the crystals still more numerous than ever, only they were much smaller, and accordingly less irritating to the urinary tracts. In fact, all traces of the hematuria had disappeared, and the pains in the loins were far less severe.

March 6.—I gave *Phosph. ac.*, hoping to check the loss of phosphates, and continued it until the 10th without any decided change in the patient's condition.

March 11.—I resolved to try *oxalic acid* itself, as it was first suggested, I think, by my excellent friend, Dr. Richard Hughes, and gave it at 6 x one drop every three hours.

Three days afterward (14th), when I saw the Baron, he was up and looked more cheerful. He assured me since he had begun to take the last remedy he had steadily improved; the pains had become very tolerable, the appetite had returned and he felt as if a weight had been removed from his chest, and his heart had not troubled him any more. He only felt weak on his legs. Gave *oxalic acid* 12th, two drops each day. Analysis of urine showed a marked diminution of the crystals (0.25 to 1,000) and of the phosphates and sulphates, as well as of the uric acid.

On the 18th I found the patient in a fair way to recover. His appearance was good; he felt strong enough to walk out in his garden for an hour or two. The urine looked almost normal, with very little sediment. Still the phosphates being in excess, I gave *Phosph. ac.* 3, suspending the *oxal. ac.* and ordered the patient spongings with cold water, followed by friction with a flesh-glove all over the body.

A week later (25th) he was entirely well; the urine was clear and normal of composition. The patient rapidly gained flesh, and a month afterward left for Styria, where he spent the summer. I happened to see him two years later in Paris, whither he had come to try a cure for diabetes.

Case 2. *Nice, December, 1883.*—Mr. P. R., journalist, summoned me to his bedside. He was a man of thirty-eight, strong built, though actually emaciated and worn out. He complained of excruciating rheumatic pains in his back, especially in the loins, preventing him from standing and walking. At night he slept a little, *but always felt much worse toward morning.* His legs felt very weak and shaky. His pains dated back from two months past. In spite of the various treatments he had undergone, his health had kept failing ever since. His family physician had treated him for rheumatism with large doses of the Salicylate of Soda until his head was whirling around. He then resorted to another doctor, who drugged him with *Colchicum* in order to overcome what he considered to be gouty pains. A third disciple of Esculapius was then called in and declared that his predecessors had altogether failed to discover the root of the disease, which was nothing less than a myelitis, upon which triumphant diagnosis he scarified the patient's back; then burnt it with the actual cautery (*pointes de feu*); then gave him Nitrate of Silver pills, and finally discouraged, fell back upon "*le cheval de bataille de impuissance medicale,*" morphia injections hypodermically. These at least gave the patient a temporary rest, after the infernal treatment to which he had been a martyr.

Such were the circumstances under which I succeeded my confreres. A thorough examination of all the organs gave me but little information. There was no fever; pulse 70 and weak; the heart was nervous, but regular; the lungs sound; the stomach, liver and bowels, torpid; the breath foul; the tongue coated; the head heavy, but no special trouble; the spine painful in the lower part, but no reflex trouble in the legs; great sensitiveness in the renal region to the pressure; a sallow tinge of the skin, which was soft and flabby. The patient grew nervous and irritable during my examination and nearly fainted, and his whole body became rapidly covered with a kind of cold, acrid perspiration.

When I asked for the urine, there was none at hand and naturally enough, for it had never been wanted before. I learned from the patient's wife that it was dark-colored, abundant, and that there was some deposit at the bottom of the vessel. I ordered some urine to be brought to my home. I more than suspected oxaluria, but without giving any decided diagnosis before having analyzed the urine, I promised the patient speedy relief and withdrew, saying that I would prescribe toward the evening.

During the day, when the urine was brought to me, I an-

alyzed it and I discovered a great number of very small crystals of the oxalate of lime, the minuteness of which accounting for the absence of red globules, and of reaction from the bladder. But a large excess of phosphates accompanied the oxalate, and this was enough to explain the languid state of the patient.

When I saw the patient at night, he was in a very excited state of mind, having suffered cruel pains in his back. His wife told me that he had been crying like a child several times in the day.

I encouraged him and told him that his illness was a mere urinary trouble, and that he would feel better soon. Thus I did not hesitate to give Oxalic ac. 6x. It seemed to act as if by magic. Three days after having begun the use of the drug, the pains had subsided to a considerable extent, the nights had been better, and the stomach had resumed its function. The patient hardly knew how to express his thankfulness. The urine showed a decrease in the quantity of the oxalate and the phosphates, which throughout my subsequent investigations kept steadily decreasing until it finally reached the normal condition, after a month's treatment.

I never prescribed anything but the *Oxalic ac.* 6 and 12th, but I ordered the patient Turkish baths and massage as soon as he could leave his bed, and I allowed him to drink only boiled water, seasoned with a few teaspoonfuls of cognac. His diet was composed of broiled beef and mutton, mashed potatoes, boiled eggs and stewed apples for more than two months.

At that time he had gained nearly twelve pounds, and felt strong and hearty. He then told me that what he thought had brought this disease on him was a series of grievous troubles in his family affairs and private business, against which he had struggled very hard. And I cannot but agree with him on that score, for mental troubles and depressing ideas have the greatest influence over the production of this curious disease.

Case 3. Odessa (Russia), August, 1884.—Stanislas K. was brought to me by one of his friends whom I had cured of a severe supra-orbital neuralgia; he was a young Pole of twenty-three, tall, slender, fair, looking pale and tired out. He had been suffering for some months with suppurative adenitis in the neck and the right axillary region, and a cold abscess situated superficially under the skin in the lower portion of the left side of the thorax. The suppuration was intermittent, being some days much more abundant than at other times.

Moreover, the patient complained of frequent distressing pains in the lower part of his back, and felt a sense of fatigue *which was worse in the morning.* He felt nervous, uneasy and unable to think. He had been kept under large doses of Iodide of Potassium for a number of weeks, and he dressed, himself, his abscesses with a solution of Carbolic Acid.

On examination I was unable to discover anything wrong in the actual condition of his organs, save a slight obscurity of the vesicular murmur at the top of his right lung. But the bones of his legs and arms exhibited signs of former rachitism during childhood. I did not suspect anything wrong in the urine, nevertheless I examined it, as is my custom, and I was amazed to discover quite a number of crystals of the oxalate of lime in the field of the microscope. Why! Could the precarious condition of the organism created by the drain of phosphates (which always attends the presence of the oxalate) be the cause of the persistence of the abscesses of my patient? It might be so. My favorite anti-oxalic treatment once more succeeded remarkably. I kept my patient upon *oxal. ac.* 6 and 12th for three weeks, with marked improvement in the general health; the cervical abscess was first to give signs of amendment, and by the fourteenth day was entirely healed; the axillary one closed on the twentieth day, but that on the left side was only slightly affected. It still continued to discharge a thin, slightly greenish colored and appreciably offensive pus. Still the condition of the urine was very satisfactory, inasmuch as there were very few minute crystals to be found therein and only a normal quantity of the phosphates. The patient walked much and felt strong enough to be willing to ride, which I did not allow. I then gave him *Silicea* 12 and Calc. Carb. 12 and ordered him Russian and sea baths to be taken alternately four times a week, together with a plentiful diet and Kachety wine from Caucasus.

In less than a fortnight the abscess was drained and closed, and after a month's treatment under Calc. phosph. 3 x, the young fellow was so perfectly restored to health that the apex of his suspicious lung exhibited no sign of obscurity to auscultation. I can not but think that some of the lymphatic glands which cluster around the inferior portion of the trachea were swollen at the time of my first inspection and were the means of creating a compression of the neighboring pulmonary tissue.

I ought not to forget stating here that I discovered that the young man had been worrying for months previous to his attack, from an unfortunate love affair.

Case 4. *Paris, June, 1885.*—Princess P. G., Russian,

æt. forty, and stout, had been suffering for some months from slight but nevertheless painful attacks of "angina pectoris." At the same time her general health had been declining, and, when she sent for me, I found her thin and discolored, complaining of intermittent pains in the back with a dull feeling in the legs. She told me that she had experienced much anxiety within the last six months about her young daughter, from whom she had to be separated since the latter's marriage, which had proved to be anything but a happy one. The princess was aware of having lost flesh and strength ever since that separation. She said, "I feel as if life were slowly oozing out of me." Gave *Ignatia and Lachesis.* The next day I witnessed an anginal paroxysm, which was of very short duration.

Having inquired about the urine, the patient stated that it was dark and thick, which rather surprised me, for nervous troubles are generally attended with pale urine. Two days later, on analyzing the urine, I found quite a number of crystals (0.75 to 1.000 of water), and a large excess of phosphatic substance.

I jumped at once to the conclusion that this dyscrasia, probably dating back some months, was the chief cause of the angina pectoris, which was trying to gain a foothold in the disabled organism.

Oxal. ac. 6 was administered in drop doses four times a day, and, so far as the general state was concerned, it gave immediate relief. In a very few days the aching condition of the back and legs had subsided to a considerable extent, but on the third day of treatment a distressing paroxysm took place, after a long drive, which the princess had taken through the "Bois," during the prevalence of a disagreeable east wind.

That was the last severe attack of the kind, although every other day there would come on toward night a slight feeling of dyspnea. I then gave *Arseniate of Strychnine* 3, trituration, two grains three times a day, and in the course of a fortnight the patient was almost free from all her ailments. The oxalic crystals and the phosphates had slowly disappeared from the urine, which was now much richer in urea.

This latter result ought very likely to be partly attributed to the hygienic measures the princess had adopted, such as cold spongings, frictions, massage and hot sea baths, as well as a proper diet.

Subsequently I had to give the patient repeated drops of *Ignatia* 3, which remedy seemed to act very well, now that the field was cleared of the oxalic complication. When I saw her in Nice the following winter, she looked ten years younger,

and had rallied wonderfully both mentally and physically. True enough, her daughter had joined her by that time.

Remarks.—It may safely be inferred from the above cases that under as yet little known conditions, a chemical compound may be developed in the blood and tissues, which, if excessive, is usually attended with a group of morbid symptoms. Strange as it may seem, that compound is not, strictly speaking, a foreign one. It constitutes one of the normal products of nutrition, and is one of the last stages of combustion of the ternary and albuminous substances in the tissues. That oxalic acid exists in the normal blood is conclusively shown by Dyce Duckworth & Leared's experiment; take a healthy man, whose urine does not exhibit the slightest trace of oxalate of lime, and let him drink 100 grammes of lime-water, and the crystals of the oxalate will immediately make their appearance. This oxalic acid is always present in the blood, but only in a very small quantity, and it is constantly being destroyed therein.

Now when its proportion is notably increased and when such overproduction becomes a permanent condition, the acid escapes oxydation, and the organism becomes tainted with a kind of acid dyscrasia, which has been termed *oxaluria*, though I would rather call it "*oxalhemia.*"

Symptoms.—The physical and pathognomonic sign of that affection is very easily recognized. A simple microscopical inspection of the urinary sediments will reveal the existence of the characteristic crystals, with their octahedric facets and their peculiar refraction. Their number may be very considerable, and they may attain a size such as to cause lacerations in the renal tissue and hematuria.

As to the general symptoms, they chiefly consist of more or less violent pains in the loins and the renal region, extending sometimes along the whole back; a feeling of numbness in the limbs, attended with great weakness, and what I consider as still more important, a sense of general heaviness, *which is more pronounced in the morning hours after the night's sleep.* This peculiar feeling is owing to the fact that sleep, by lowering the temperature of the blood and slackening the oxyda-

tions, increases the additional quantity of oxalic ac. in the blood. As to the weakness of the legs, it might be attributed to the diminished alkalinity of the blood, which condition, according to J. Ranke, causes muscular weakness. The digestive functions, as a rule, are altered; the breath is foul, and the patient is thirsty. The oxaluric patients are nervous and irritable; the least exertion brings on a kind of acrid perspiration; the features are drawn and the skin is sallow and flabby. In many cases you will find still more marked perturbations of the nervous system, such as supra-orbital, intercostal and even cardiac neuralgia, as shown in Case 4. In protracted cases, patients lapse into emaciation and hypochondria. Most of these symptoms unmistakably point to the distress of the nervous centers. And in fact, besides the special toxic influence the acid has upon them, they seem to suffer a drain of their phosphatic elements. This is clearly demonstrated by the urine of these patients, which sometimes shows a considerable amount of the earthy phosphates. The mechanism of that loss is easily explained, for Oxalic acid, greedy of lime as it is, robs the tissues of the calcareous elements that are necessary to their constitution. It even seeks for lime in the anatomical elements, which, deprived of their mineral "substratum," crumble away and are doomed to disappear. Oxaluria is an essentially apyretic disease. In my patients I always found the temperature below the normal point, oscillating between 97.5° and 99°, which is explained by the fact that fever, by promoting the activity of the organic combustions, would virtually put an end to the dyscrasia itself.

Nevertheless, the key-note of all this symtomatologic survey is the analysis of the patient's urine, and in no disease, perhaps, is the necessity for such research more clearly indicated. This is a point of clinical teaching, the importance of which ought not to be overlooked. Moreover, in my opinion, a physician who cares for his diagnostic reputation, is bound to examine the urine of each new patient who comes under his care. The examination of the urine at the bedside is very often a trusty guide and a sure test.

The *Etiology* of oxaluria is quite obscure as yet. Among the most probable causes I would name a sedentary life, confined air, want of muscular exercise, venereal excesses, but above all, depressing mental emotions as grief, business troubles, anything, in fact, that has the power to impair the nervous energy and the vital reaction. I think it is more frequent with men than with women.

What I have to say about the *Treatment* has already been indicated. Of course, in light and incipient cases, when the patient is able to go about and suffers little, a sound hygienic treatment will suffice in restoring the nutritive functions. On that score anything that will give a good whipping up to the nervous system will find a legitimate place in the treatment, such as hydrotherapia, cold spongings, followed by friction with a flesh-glove; Turkish baths and massage; hot and cold sea baths. I would also advise plenty of out of door exercise, long rambles in the country, riding, fencing, and all the games which necessitating a violent use of the arms will promote the amplitude of the respiratory function.

As to food, let the patient eat equal portions of meat and vegetables, but strictly prohibit gaseous drinks, such as beer and champagne; water should only be taken when deprived of lime by boiling; hot water after meals will be useful in accelerating both digestion and organic combustion. Sorrel, spinach, tomatoes, rhubarb, and in general any kind of acid fruit should be avoided. Still, the best course a patient can take, when he can afford it, is to seek diversion, jovial impressions, to undertake a journey, or to join a hunting party.

Of course this treatment will have no application to severe cases, which I must say are very uncommon. Here it is that Oxalic ac. will be found of invaluable service, as illustrated in the above cases.

The speedy and permanent cures effected through that agent, are well worth consideration, and that it should have removed at the same time such incidental affections as "angina pectoris," and suppurative adenitis is certainly very suggestive.

How shall we explain the curative action of oxalic acid in the cases referred to?

Far from me the vain thought that I am going to explain anything. Explanations, even the most accurate and the most gratifying to the inquiring mind, are nothing better than more or less ingenious "guesses at truth." Facts, on the contrary, when carefully observed, always retain the substantial value which singles them out of the "nihil," even when they are neither satisfactory to the observer, nor referable to definite causes.

So far, I will content myself by pointing out a certain category of facts, which take a peculiar light when brought together, be the conclusion what it may.

It seems to be a fairly established fact that the ingestion to an excess of most of the chemical elements which constitute the tissues of our organism, brings on a kind of disease very much akin to that which ordinarily results for it from the deficiency of the same substances.

Thus the habitual drinkers of chalybeate waters become anemic; thus, too, the endemic prevalence of goitre and cretinism in the localities where the inhabitants drink water impregnated with calcareous salts. (Sir Thomas Watson.)

Now, it is another fact, to quote Richard Hughes' words, "that these elements of the tissues, when given as medicine, promote the assimilation from the food and blood of the very material of which they consist."

Thus it is that *Ferrum* and *Calc. carb.* in our hands cure anemia and goitre, as well as the consequences of this latter condition.

The third fact which I want to indicate, because it bears directly upon the present cases, is that these same elements of tissues, given as medicines, have the power to check the over-production and the waste of the corresponding elements in the organism, when such waste constitutes the chief feature of a given illness.

That Ox. ac. displays a remarkable activity in the treatment of oxaluria; that *Phosph. ac.* is able to check phosphaturia, when unconnected with the presence of an excess of Ox.

acid in the system, are facts that each of us may easily observe and control.

And again, those of us who have had to deal with patients afflicted with biliary calculi, know what marvellous action *Calc. carb.* 30 displays, either in quieting distressing pain of the colic, or in preventing the formation of new calculi. I have confirmed this clinical fact repeatedly. Well, I only conceive the action of this remedy inasmuch as it dynamically checks the formation in the humors, and particularly in the bile of an excess of *lime,* which, according to the latest and most trustworthy works of Bouchard and Beneke on pathological physiology, is the chief cause of the precipitation of cholesterine and formation of biliary calculi.*

Whatever may be the value of these considerations, I think it would be highly interesting to establish by further inquiry into the matter whether, being given a clue to a special waste of organic tissue, we could check it by opposing the chemical element to itself.

There can be no question of isopathy here, nor am I one of Dr. Schussler's followers. The use I have made of *Ox. ac.* is highly consistent with the law of similars. In fact all the symptoms of any importance observed in oxaluria have been noted in the few provings and numerous poisonings by that drug, wherefrom we have derived some knowledge of its physiological and toxic properties. To one who has read the cases cited by Drs. Christison and Coindet, Scott, Hebb, Arrowsmith, etc., it forcibly occurs that the drug has a decided affinity for the nervous centers, the peculiar activity of which symptomatically points to irritation of the spinal meninges, and of the marrow itself. This auto-intoxication by a self-created poison, calls forth to the mind the recent discovery of a variety of organic poisons in the blood and tissues of the corpses, and therefore termed *ptomaines.* Like so many dreaded snakes, we are venomous animals, able to elaborate in our body scores of dire and subtle poisons, which, owing to

*Most of the biliary calculi consist of cholesterine. Now this substance is only kept in solution in the bile so long as this fluid is sufficiently alkaline. But when an excess of lime is present, it attacks the fat and biliary acids, forming insoluble soaps and cholates, and the cholesterine is precipitated. Thus *Calc. Carb.*, by opposing the overproduction of lime, seems to attack the disease by the root.

the instability of their molecular structure, are constantly burnt and carried off by the torrent of vital processes. But let disease set in, and they will accumulate in the organism, soon quenching the springs of life. What wonderful weapons for us to wield against death, when we have learned how to secure the services of such terrific agents!

Ox. ac. at least is already within our reach, and is comparatively easy to study in its evolution through the organism. No doubt it is a formidable poison; 2 or 3 drachms of it will surely kill in a few minutes. Gifted with such an activity for the worse, it must have an equal activity for the better. This it is in our hands to verify. But we know too little as yet of the properties of the drug, and think that a good reliable pathogenesis of it would open a much wider field of fruitful clinical application.

THE ALUMNI ASSOCIATION is out with its fly-leaf note of invitation and calendar for the meetings during Commencement week. The first item on the programme is a reception to be tendered the members of the Association by Dr. R. Ludlam, at his residence, 1823 Michigan Ave., on Wednesday evening, February 23, at eight o'clock. About eight hundred invitations have been issued, but as the majority of the Alumni are far distant, it is even more urgent that all the graduates of "Old Hahnemann," who can, should present themselves on this occasion. The Executive Committee will add to its number two lady graduates, who together will form a Reception Committee on that evening. The following morning, Thursday, February 24, at 10 o'clock, in the Grand Pacific Hotel, the business meeting of the Association will take place. The same afternoon the Commencement exercises of the Hahnemann College will be the attraction, and in the evening the Alumni banquet and reception to the Faculty and Class of '87, will undoubtedly be a brilliant affair.

The Secretary of the Association is receiving, with each mail delivery, a handful of responses to the Reception invitations, and as it is quite essential that he should know who will be in attendance, it is to be hoped that all intending to come will respond at once.

Hospital Notes.

THE CLINIC OF PHYSICAL DIAGNOSIS.

SERVICE OF PROF. CRAWFORD.

PHTHISIS, FIRST STAGE, RIGHT APEX—RECOVERY.—*Case* 19181.—This little girl, eleven years of age now, came under our care, June 10, 1886. She had had scarlatina last winter, and in the spring a cough came on, which was continuous. She was always very subject to take colds, and of late there were several attacks of hemoptysis. Her father is an asthmatic subject.

The general appearance of the child is comprised in pallor, languor and leanness. The local signs furnish the evidence of pulmonary infiltration in the right apex. The more prominent clavicle on that side; the lessened expansion, the absence of the normal breath sound, it being replaced by a catchy tubulo-vesicular quality of inspiration, and a prolonged blowing for expiration, suffice to stamp it.

Four weeks after the first examination, the left apex gave signs of similar mischief brewing there, and, over the right jugular, a loud venous hum was noted.

The character and aggravation of the cough suggested *Kali carb.*, and this was given with the satisfaction of seeing the peculiarities of the *Kali* cough disappear, but with the dissatisfaction of seeing the disease progress rapidly downward. Then *Jodium* was prescribed but no benefit seemed to result. *Phosphorus* 30 was next chosen, and the friends advised to take the girl into the country, and feed her on good milk, fresh eggs and vegetables.

In September, she presented herself again at the hospital, looking bright, plump and rosy, having spent a month or six weeks of the interval on a farm. The vesicular murmur of the apices was restored almost to the normal, only a little rough breathing in the left clavicular region remaining. She is again allowed to go to school, is perfectly well and hearty, and at the last examination, January 8, 1887, there were no abnormal pulmonary signs discoverable.

PHTHISIS — THIRD STAGE — ARRESTED — *Case* 19189. — A German woman, sixty years of age, only a short time in this country, was so wasted and weak last June that she required the assistance of two relatives, one at each elbow, to enable

her to reach the hospital. Seemingly there was a period of improvement, but this soon changed, and during the latter part of July she was prostrated in bed, and so very low that no one looked for her rising again. Dr. W. P. McCracken, of the class, attended the patient at her home, and in a short time it was his pleasure to see her able to visit the hospital again alone.

When first examined her pulse was 108 and her respirations 28 per minute. The thermometer recorded a normal temperature, but, it being noon time, this was not remarkable. The clavicles and ribs could each be counted easily, and the respiratory movements were labored. She was having profuse sweats and abundant purulent sputa. The cervical glands were much swollen and reddened, threatening suppuration. The respiratory sounds were chiefly bronchial, where the air permeated the lung tissue, loudly transmitted, and attended with mucous rales and occasional gurgles.

After the abatement of the threatening symptoms the act of respiration was found to be much easier, and the moist rales very much diminished, in fact only occasionally detectable. Percussion, while the patient held her chin up and mouth open, gave forth cracked-metal resonance over the left second inter-space, and cavernous breathing was heard in the same locality, certain evidence of the existence of a dry cavity, with more or less tense walls in the upper part of the left lung.

This patient's cough has almost disappeared; there are no troublesome night sweats nor evening febrile movements, and her strength and flesh have very much increased. There is an absolute stay in proceedings in this far-gone case of consumption, and *Arsenicum* 3 and *Jodium* 3 have been the only remedies used—sometimes singly, sometimes in alternation.

PHTHISIS—SECOND STAGE—LEFT LUNG—RECOVERING—*Case* 19059.—It is requisite to go back to our Clinic records of January, 1885, for the beginning of this case. At that time under inspection there was noted cardiac impulse slightly displaced downward, left clavicle prominent. Under palpation, increased fremitus left side on coughing, not when speaking. By the latter test fremitus more marked on the right side than left. Percussion gave dullness along the whole anterior surface of the left chest more marked from the third interspace up to the apex. By auscultation, tubular breathing, with high pitched expiratory murmur and mucous clicks were heard. The right chest possessed much better power of expansion than the left, and transmitted no adventitious sounds, except-

ing when the patient caught cold, when sibilant and sonorous rhonchi were present in both lungs.

The general state of this man's health was exceedingly poor; he had lost 25 pounds of flesh, and was too weak to work at his trade which was roofing. His temperature was 99, and his pulse 84 per minute, and polycrotic. He had lived in Colorado, until he became ill, then he came to Chicago for his health.

There can be no doubt of the existence of consolidated lung tissue at this time, and that softening of the mass had already set in. Hence a case of the second stage of phthisis. He took compound oxygen, and *Jodium* 3 and 6, and followed assiduously the diet exercise and general hygiene advised.

Now if we turn to the record of this case in September last, we find that there is only slight dullness at the left apex, the remainder of the lung being clear. A little sub-crepitation is heard in the same locality, and the right apex is similarly disposed, although much less than its opposite. So that there are now no signs of consolidation, excepting the dullness noted above and the transmitted voice. He expectorates very little, and this is never bloody, as it was two years ago. And he is doing excellently in every other way, having more than regained his lost flesh and color and strength. He is now taking *Phosphorus* 30, and continuing his compound oxygen.

Pleurisy with effusion—*Case* 19135—Mary H., age forty-two, has been in this country only a few weeks. She has not been well since catching cold ten months ago. Coughs but little. Complains of a great deal of pain in the stomach and bowels, and constipation. Recently she suffered from an attack of mastitis, accompained by fever for four weeks.

The costal interspaces of the right side are even with the ribs. Tympanitic resonance over the right apex, diminished in the second interspace, and lost from the third rib down. Percussion dullness along the whole length of the posterior scapular line, and absence of vesicular breathing throughout the lower two-thirds of the right thorax. On the left side respiration is exaggerated. All these signs of density of the right side sustain the diagnosis of pleural effusion.

She was advised to remain in bed, to restrict fluids from her diet, and take *Apis mel* every two hours. Had she remained in one of the wards of the Hospital as we desired, the aspirator would have been used, but instead, she went off with her friends and did not return.

Mitral incompetence—from rheumatism—*Case* 19140.—Annie H., age eleven. Increased impulse of the heart. Apex

beat felt in the sixth interspace in the mamillary line. A blowing murmur is heard with the first sound of the heart, its maximum of intensity is at the apex, and its transmission is leftward. The murmur is only dimly heard in the ensiform region, not at all at the base, but is distinguished at the angle of the left scapula. The second sound is accentuated, especially over the pulmonic notch. Area of percussion dullness enlarged. Pulse runs 96 per minute, full but compressible. She is a pronounced rheumatic subject, and the valvular mischief has evidently arisen from rheumatic endocarditis. Her most troublesome time is at night, when pains and palpitations make her miserable. She was given *Crotalus* 3 four times a day, and a dose or two of *Moschus* at bed-time to relieve the nightly palpitations, which it accomplished. Then the *Moschus* was stopped.

For an acute return of rheumatism, which occurred in the course of her attendance at this Clinic, *Aconite* was substituted for the *Crotalus*, given at first every two hours, then four times daily for several weeks.

The case is improving; the murmur is lessened in volume; the heart is acting more regularly, less intensely, and slower, and the systemic venous circulation is improved.

Aortic stenosis — from rheumatism — *Case* 19147.— Washer woman; rheumatic diathesis; always worse when at the wash tub; feels pretty well when she does light work.

A murmur is heard over the second right intercostal notch, accompanying the first sound of the heart. Sometimes termed an aortic direct murmur, the result of some obstruction to the haemic current through the aortic orifice. Prescribed *Rhus tox* 3 four times a day. We need not infer that because this patient did not return, the prescription killed her.

Dilatation of the heart—possibly from myocarditis— *Case* 19150.—Mr. E. D. S., aged forty-eight, had been sick fifteen months before presenting himself at the Clinic. He first noticed a dry cough, then his heart began to palpitate violently. When this had continued a week and a half, he was so prostrated he was compelled to go to bed, where he remained three weeks. Then the excessive action of the heart abated, but he was very weak and could do nothing. He has never had diphtheria or rheumatism. About two months later he began to bloat, which rapidly spread over the whole body. At no time since then has he been free from anasarca.

By inspection the abdomen is found to be immensely distended, and fluctuation is easily made out. The ankles and

legs are swollen, and the surface of the body pits on pressure. The cardiac dull area is lowered and broadened, the impulse of the apex is not perceptible, but an undulatory motion is conveyed to the hand when pressed against the chest wall. By Paul's method of percussion, the lower border of the heart was demonstrated to measure seven inches, an increase of fully an inch and a half over the normal. The apex beat can be located only by the stethoscope, and it entirely lacks the throbbing quality.

After a fortnight's treatment the same method of measurement made the base line of the heart six and one-half inches, and a slight impulse is discernible in the sixth interspace directly below the nipple, and the ear defines more distinctly the heart sounds, but no murmur whatever. The patient feels better and the ankles are less swollen, but the ascitic accumulation has increased. The water-line across the abdomen is higher, reaching into the hypochondriac regions. The partial improvement noted occurred under the administration of *Lycopodium* 30, the *Apis* given at first, making no impression.

But the urine did not remain clear as it promised to under *Lycopodium*. It again became dark and scanty and deposited a reddish sediment. This was cleared up and increased in amount to one and a half pints daily by *Colchicum* 1, a dose every two hours. *Apocynum* was likewise given, and with these three remedies, prescribed on different occasions, some slight abatement of the ascites and anasarca took place, and the general symptoms improved during the few weeks Mr. S. haunted the hospital.

Under the most favorable circumstances, such a case is not promising; not one on which it might be hoped a remarkable record could be made, that is, if our reading of his clinical history is right. In the first place no cardiac inflammation has such violence of heart's action, and prostration as myocarditis. In the next place myocarditis is the most profound deteriorator of the cardiac muscle of any of the inflammations. In the third place weakness and flaccidity of the cardiac muscle means fatty degeneration or dilatation, or both. In the fourth place passive dilatation must of necessity engender stasis of the circulation; and in the fifth place sluggish capillaries and an overladen heart are bound to produce cellular and serous effusions. To carry a patient back, crab-like, by therapeutical measures, through these successive pathological status, to a condition of health, is more than we have warranty to build upon.

CARDIAC HYPERTROPHY FOLLOWING PREGNANCY—*Case* 19155. —This woman was referred by Prof. Ludlam for an examination of the thorax. She has been under treatment for subinvolution of the uterus. She complains of a dry hacking cough and palpitation of the heart, made worse by walking up stairs. Has considerable headache and dizziness. She has borne two children, and had trouble with the heart during both pregnancies. Sometimes, while sitting quietly, she experiences a sensation of faintness.

No pulmonary trouble is discovered. The apex beat is intense and full and the the cardiac dull area is enlarged. No murmurs.

The physiological cardiac hypertrophy of pregnancy seems to have forgotten to undergo involution, just as the uterus did.

She was given *Secale cor.* 3.

LOBULAR EMPHYSEMA—*Case* 19198.—Mr. B. age fifty, says he has had eleven attacks of pneumonia, the first one occurring while in Tennessee, during the war.

At present we note bulging of the chest walls. This differs considerably from the "barrel-shape" assumed by the thorax in idiopathic or lobar emphysema. The bulging is not uniform, it is indefinitely outlined, and is more noticeable on the right side than the left. The percussion hammer brings out exaggerated resonance corresponding closely with the areas of distension. In the right mammary region, where the bulging is greatest, the note is a shallow tympany. The apical breathing is soft, diminished in its vesicular quality, and the expiratory murmur prolonged. Over the locality where the amphoric resonance was obtained, the respiration is almost inaudible. The heart sounds are best heard on full expiration, otherwise they are faint and distant.

This is one of those cases in which partial or vicarious emphysema is an established condition, in consequence of the concussive force of coughing. If the patient has had eleven attacks of pneumonia, or by allowing a liberal deduction of fifty per cent, say five and a half attacks of pneumonia, he has had sufficient pulmonary inflammation, and therefore cough, to test the power of resistance of the air-cell tissue; with what disastrous results we have seen by the physical signs adduced. The comfort in viewing the case comes from the fact that this form is not a progressive disease, unless the inflammations are repeated and the cough kept up, and his present condition is not one inimical to life. He is simply a lung cripple, and must not attempt to run a race, unless it be with a gonitic anchylosed neighbor.

DEC 6 1922

Obituary Notice.

The greatest misfortune that has ever befallen the Hahnemann Medical College and Hospital of Chicago and the homœopathic profession in the Northwest, occurred in the death of Prof. A. E. Small, on the last day of December, 1886. The event was sudden and startling, for on the previous evening he had returned as usual from his daily round of visiting his patients, spent the evening at his own fireside with his family and a few friends, and passed a pretty comfortable night. In the morning, however, while dressing, he was seized with dyspnea, sank into his chair, became insensible, and in a very few minutes was—dead.

Dr. Small was born in Wales, Me., March 4, 1811. He enjoyed the benefit of strict parental discipline, and so improved the opportunity for education in the district schools, that, at the early age of sixteen, his training and judgment secured his appointment as principal of the public grammar school. He was afterward principal of one of the public schools in Bath, Me., for the space of two years. These facts explain his scholarly taste and predilection, which were always remarkable.

He began the study of medicine in 1831. His professional studies were carried on in Saco and in Portland, Me., in the Chelsea Hospital of Boston, and in the Pennsylvania Medical College of Philadelphia, where he graduated as a pupil of Profs. Geo. B. McClellan & Samuel Geo. Morton. He had a successful practice in Delaware County, Penn., but in 1845 removed to Philadelphia, where, in 1849, he was elected the first professor of physiology and pathology in the Homœopathic Medical College of Pennsylvania. In 1856 he removed to Chicago, where he soon assisted in the organization of the Hahnemann Medical College and Hospital, with which he has since been so constantly and so efficiently identified.

Prof. Small was, therefore, a teacher for nearly *sixty* years, and a medical teacher for almost *forty* years. It is confidently believed that he lectured to a larger number of students than any of our professors have ever done; while it is known that he signed the diplomas of nearly 2,000 medical graduates.

He was a ready and forcible writer, and was for several years one of the responsible editors of the *Philadelphia Journal of Homœopathy*, and afterward of the *U. S. Medical and Surgical Journal*. His Manual of Homœopathic Practice, a very useful publication, passed through fifteen large editions. His contributions to our medical societies were always direct and exceedingly practical, and his participation in the discussions pleased and profited everybody.

His dignity, his character, his devotion to the best interests of the profession, his consistent and persistent kindness of temper, were very remarkable, and will always be remembered by his pupils, his patients and his sorrowing colleagues.

The following resolutions were adopted at a joint meeting of the trustees and the faculty of the Hahnemann Medical College and Hospital:

WHEREAS, After a long and eventful life it has pleased Divine Providence to remove from our midst Prof. A. E. Small, M. D., for so many years president of the board of trustees, and an active member of the faculty:

Resolved, That in his death the trustees and faculty have met with an irreparable loss.

Resolved, That, during the long term of his professional life, his reputation as a teacher and as a practitioner has been without a parallel.

Resolved, That, having enjoyed the benefit of his counsel and his labors during the almost thirty years of its existence, this institution, its trustees, its faculty and its alumni are sorely bereaved by his death.

Resolved, That we not only wish to express our appreciation of his professional worth, but also of his sterling qualities as a man, a neighbor and a Christian gentleman.

Resolved, That we tender to his bereaved widow and family our warmest sympathy and respect in this their great affliction.

A similar tribute of respect was also voted by the Clinical Society:

WHEREAS, In the recent death of Prof A. E. Small the Clinical Society of the Hahnemann Hospital has lost its foremost friend and charter member, therefore be it

Resolved, That this event will deprive us of the fellowship and counsel of one of our most earnest and efficient co-workers.

Resolved, That his contributions, to this society, especially, have always been of such a practical kind as to commend them to the confidence of all who have either heard them or read them, and that they will continue to be most acceptable and useful to the profession.

Resolved, That in the discussion of the papers and reports presented to this society Dr. Small showed an untiring and an unusual interest and willingness to give of the fruits of his large and varied experience for the benefit of its members and of physicians generally.

Resolved, That this society hereby tenders its sincere condolence and sympathy to the widow and family and to the friends and patients of our departed brother in this our mutual affliction.

Miscellaneous Items.

A memorial of Prof. Small is soon to be published, and communications suited therefor should be sent immediately to Prof. Hall, chairman of the committee, 2400 Prairie Avenue, Chicago.——The death of Dr. David Cowley, late president of the Homœopathic Medical Society of Pennsylvania, is announced.——The fifth edition of Helmuth's Surgery, is out, and a royal good book it is too.——Other new publications of the month include the Fourth Annual Report of the Homœopathic Free Dispensary of Washington, D. C.; Fasicle V. of Millspaugh's Medicinal Plants, by Bœricke & Tafel; Transactions of the Homœopathic Medical Society of Pennsylvania, XXI Annual Session, 1886; and Medical Education and Medical Colleges in the United States and Canada, 1765–1886, by the Illinois State Board of Health.——Dr. Arnulphy has changed his office to Central Music Hall.——Dr. D. S. Smith has been re-elected president of the Hahnemann Medical College and Hospital of Chicago.——The final examinations in the "Old Hahnemann" begin February 14.——Do not forget or fail to attend this year's meeting of the Alumni Association, February 23 and 24.——The Twenty-seventh Annual Commencement of the Hahnemann Medical College and Hospital will occur February 24.——Subscribers will confer a great favor by remitting the subscription price without delay. *Only One Dollar for the year.*——Dr. Belle L. Reynolds has been reappointed physician to the Home for the Friendless for the current year, and Dr. Frederic Stevens has accepted the position of Alternate. The consultants remain as before, Dr. Geo. A. Hall, surgeon, and Dr. R. Ludlam, physician.——The present class of Hahnemann College lost one of its members, Mrs. Geo. R. Dunham, by death, January 15.——Read the Alumni notice on page 43.——A bright alumnus responds in this wise: "It is with exceeding regret that I write over against your 'R. S. V. P.' an 'M. S. C. C.' Mighty Sorry Can't Come. We always thought the original of this was 'D. S. C. C.'